

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : TAKURO ISHIBASHI ET. AL.

Serial No. : 10/019,408

Filed : July 3, 2000

For : TOOTH BLEACHING COMPOSITION AND METHODS FOR
BLEACHING DISCOLORED TOOTH

Art Unit & Examiner : 1614, S. Rose

DECLARATION UNDER 37 C.F.R. 1.132

Honorable Commissioner of Patents and Trademarks

Washington, D.C. 20231

Sir:

I, the undersigned Hiroshi Kurata do hereby declare:

That I graduated from Department of Applied Chemistry of Gunma University in March 1992, entered Mitsubishi Gas Chemical Company Inc. in April 1992, and since then has been occupied in Improvement of Hydrogen Peroxide, Biodegradable Water-soluble Polymer and Biodegradable Polymer in the Corporate Research of the same company up to now;

That I joined the theme of the research after completion of the present invention and I am familiar with the subject matter disclosed in the said application;

That I have a good knowledge of the English language and have read and understood the application papers and the Examiner's Official Action as well as the reference cited therein in the prosecution of the above identified patent application;

and

That, in order to show the different between the subject matter of reference and the subject matter of the application, the following experiment was carried out.

Experiment

(1) Procedures of Experiment :

The same bleaching composition in Example 7,8 and 12 in the present specification were produced, which were composed of the constituents shown in Table-A as under. The bleaching composition in Example 7' in Table-A was produced in the same way of Example 7 in the present specification, except the content of Hectorite was changed.

The bleaching composition in Experimental No.1 to No.4 in Table-A were produced in the same way of Examples in the present specification, except silica-gel was used as the thickening agent.

Table-A

	Titanium Dioxide (%)				Thickening Agent		Oxidative Chemical	
	Trade Name	Cryst al Type	Particle Diameter (nm)	Cont. (wt%)	Type	Cont. (wt%)	Type	Cont. (wt%)
Ex.7	TAYCA MT-150	Rutile	15	0.060	Hectorite	1.8	H ₂ O ₂	5.8
Ex.7'	TAYCA MT-150	Rutile	15	0.060	Hectorite	5.0	H ₂ O ₂	5.8
Ex.8	TAYCA MT-150	Rutile	15	0.030	Hectorite	2.2	H ₂ O ₂	3.2
Ex.12	TAYCA AMT-150	Rutile	15	0.100	Saponite	3.5	H ₂ O ₂	15
Exp.1	TAYCA MT-150	Rutile	15	0.060	Silica-gel ¹	1.8	H ₂ O ₂	5.8
Exp.2	TAYCA MT-150	Rutile	15	0.060	Silica-gel	5.0	H ₂ O ₂	5.8
Exp.3	TAYCA MT-150	Rutile	15	0.030	Silica-gel	2.2	H ₂ O ₂	3.2
Exp.4	TAYCA MT-150	Rutile	15	0.100	Silica-gel	3.5	H ₂ O ₂	15

*1 : Silica-gel was produced by Aerosil Co. Ltd. (The average particle diameter is 12nm.)

The viscosity of the bleaching compositions was measured by Vismetron VGA-4 produced by Shibaura System Co., Ltd under the condition as under. The tested solution in the tall beaker was kept static for 15 minutes before the measurement.

The temperature of the water bath ; $25 \pm 0.5^{\circ}\text{C}$

The temperature of the tested solution ; $25 \pm 1.0^{\circ}\text{C}$

The measurement time ; 1 minute

The rotor number ; 2 or 3

The revolution speed ; 6 rpm or 60 rpm

The tall beaker ; 100 ml

The weight of the tested solution ; 100 g

(2) Results of Experiment

The measurement results are shown in Table-B as under.

Table-B

	Viscosity (cp)
Ex.7	1100
Ex.7'	
Ex.8	2000
Ex.12	>20000
Exp.1	<50
Exp.2	<50
Exp.1	<50
Exp.1	<50

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Hiroshi Kurata

Date : _____